

## CLAIMS

What is claimed is:

1. A flexible container comprising:
  - a flexible front sheet and a flexible rear sheet attached to one another along at least one edge,
  - a container port comprising a nozzle integrally molded to an attachment flange disposed in between the flexible front and rear sheets;
  - wherein the attachment flange comprises:
    - a first attachment flange layer comprising an interior surface and an exterior surface and a second attachment flange layer comprising an interior surface and an exterior surface attached to one another along at least one edge,
    - a first configuration comprising the two interior surfaces of the first and second attachment flange layers contacting one another, at least in part, when positioned in between the flexible front and rear sheets and heat sealed to the flexible front and rear sheets with at least one heat bar, and
    - a second configuration comprising the two interior surfaces spaced apart from one another at a location away from the at least one edge when the at least one heat bar is removed.
2. The flexible container of claim 1, wherein the first and second attachment flange layers are connected along a second common edge.
3. The flexible container of claim 2, wherein the two common edges are creases formed from integrally molding the first and second flange layers.
4. The flexible container of claim 1, wherein the attachment flange comprises a first opening and a second larger opening.
5. The flexible container of claim 1, wherein the at least one common edge of the attachment flange comprises a fin.

6. The flexible container of claim 5, wherein the fin extends outwardly from the at least one common edge.

7. The flexible container of claim 6, wherein the fin tapers as it extends outwardly from the at least one common edge.

8. The flexible container of claim 1, wherein the flexible front and rear sheets each comprises a multi-layer film.

9. The flexible container of claim 8, wherein the multi-layer film comprises three distinct film layers.

10. The flexible container of claim 9, wherein a layer of the three distinct film layers is made from a blend of polypropylene-ethylene random copolymer and styrene ethylene-butylene styrene (SEBS) thermoplastic elastomer.

11. The flexible container of claim 10, wherein a second layer of the three distinct film layers is made from either polyether block amide copolymer (PEBA) or an abuse resistant material containing ester groups (EGM).

12. The flexible container of claim 11, wherein a third layer is made from SEBS if the second layer is made from EGM, and wherein the third layer is made from carboxy modified polypropylenes if the second layer made from PEBA.

13. The flexible container of claim 1, wherein the container port is made from a blend of polypropylene-ethylene random copolymer and styrene ethylene-butylene styrene thermoplastic elastomer.

14. The flexible container of claim 13, wherein the blend is in a weight-weight ratio of about 90:10 to about 70:30 of polypropylene-ethylene random copolymer to styrene ethylene-butylene styrene.

15. The flexible container of claim 14, wherein the ratio is 80:20.
16. The flexible container of claim 1, further comprising a second container port comprising a flexible attachment flange.
17. The flexible container of claim 1, further comprising a peelable seal for dividing the container into at least two compartments.
18. The flexible container of claim 1, further comprising at least one drain seal for directing fluid stored inside the container to flow towards the container port.
19. The flexible container of claim 1, wherein the container port comprises a flange.
20. The flexible container of claim 19, further comprising a terminal port affixed to the flange of the container port.
21. The flexible container of claim 20, wherein the terminal port comprises a puncture-able seal formed in an interior cavity of the terminal port.
22. The flexible container of claim 20, further comprising a terminal cap affixed to the terminal port.
23. The flexible container of claim 20, further comprising a foil innerseal affixed to the terminal port.
24. The flexible container of claim 20, further comprising a rubber septum disposed in an interior cavity of the terminal port.

25. The flexible container of claim 20, wherein the terminal port comprises a mating flange and wherein the mating flange is affixed to the flange of the container port.

26. The flexible container of claim 21, further comprising a rubber septum comprising a male plug disposed, at least in part, in an interior cavity of the terminal port and a pliable skirt folded over an exterior portion of the terminal port.

27. The flexible container of claim 21, further comprising a rubber septum disposed, at least in part, in an interior cavity of the terminal port and a metallic shell crimped to an exterior surface of the terminal port.

28. The flexible container of claim 19, further comprising a seal sleeve disposed, at least in part, in an interior cavity of the container port, and wherein the seal sleeve comprises a puncture-able seal.

29. The flexible container of claim 28, wherein the seal sleeve is adapted to receive a spike of an IV administration set.

30. The flexible container of claim 21, wherein the terminal port is adapted to receive a spike of an IV administration set.

31. The flexible container of claim 21, wherein the flexible attachment flange has a pyramid shape comprising a first end and a larger second end.

32. The flexible container of claim 1, wherein the heat bar is generally flat.

33. The flexible container of claim 32, wherein the generally flat heat bar is coated with vulcanized rubber.

34. A flexible container comprising:  
a flexible front sheet and a flexible rear sheet attached to one another along at least a portion of a common perimeter;

a container port comprising a nozzle integrally molded to a flexible attachment flange attached to the flexible front and rear sheets;

wherein the flexible flange comprises a first flange layer comprising an interior surface and an exterior surface attached to a second flange layer comprising an interior surface and an exterior surface; the two flange layers defining an interior cavity comprising a first opening and a larger second opening in fluid communication with the nozzle; and wherein

at least a portion of the interior surface of the first flange layer contacts at least a portion of the interior surface of the second flange layer when the flexible attachment flange is compressed between the flexible front sheet and flexible rear sheet with a heat bar.

35. A flexible container comprising:

a flexible front sheet and a flexible rear sheet attached to one another along a common perimeter;

a container port comprising a nozzle integrally molded to a flexible attachment flange attached to the flexible front sheet and flexible rear sheet;

the flexible attachment flange comprising a flexible front flange sheet attached to a flexible rear flange sheet along two common edges;

a fin extending from each of the two common edges of the flexible attachment flange comprising a first thickness that tapers as it extends away from the common edge to a second thickness;

a flexible front flange layer interior surface that temporary contacts, at least in part, a flexible rear flange layer interior surface as the flexible attachment flange is attached to the flexible front sheet and flexible rear sheet by a heat bar.

36. A flexible container comprising:

a flexible front sheet and a flexible rear sheet attached to one another along a common perimeter;

a container port comprising a nozzle integrally molded to a flexible attachment flange attached to the flexible front sheet and flexible rear sheet;

the flexible attachment flange comprising a flexible front flange sheet attached to a flexible rear flange sheet along two common edges;

a flexible front flange layer interior surface that temporary contacts, at least in part, a flexible rear flange layer interior surface as the flexible attachment flange is attached to the flexible front sheet and flexible rear sheet by a heat bar; and

a terminal port comprising a punctureable membrane disposed in an interior cavity thereof, said terminal port being affixed to the container port.